Camp combines summer and sciences to create fun

By Eric Raub

During the summer months, when children of all ages needed a place to be during work hours, JSC offered something special with the Sizzling Summer Camp.

The summer camp, which came to a close on Aug. 17, was a special program offered only to the children of JSC employees, both contractor and civil servant. The children ranged in age from 7 to 15.

More than 70 children enrolled and took fieldtrips to places like Moody Gardens, Space Center Houston and Astroworld. They also did activities such as rock climbing, swimming, bowling and skating.

However, what set the camp apart from other summer care programs was the weekly science enrichment program. The program was developed and directed by Universities Space Research Association Scientist Dr. Ruwaida Haddad, who recently received an Exemplary Recognition Award for her volunteer efforts with the children.

The program provided hands-on experiments that volunteers made fun, but which also taught the children valuable lessons. For example, some of this year's experiments focused on germs, infection and cleanliness.

These children participated in JSC's Sizzling Summer Camp. The camp combined science, education and field trips to create a summer of fun.

"We want to give them some science in a play environment so they don't feel like they're in a classroom," Haddad said during the summer program. "No homework, no grading–just raise their curiosity and make them ask questions ... get them to push upward."

Other science activities included a demonstration of the Virtual Astronaut Web site by Futron employee Deborah Washington and David Kiss. Indyne employee Janine Bolton prepared handouts and led an information session on using the Internet to research science and homework.

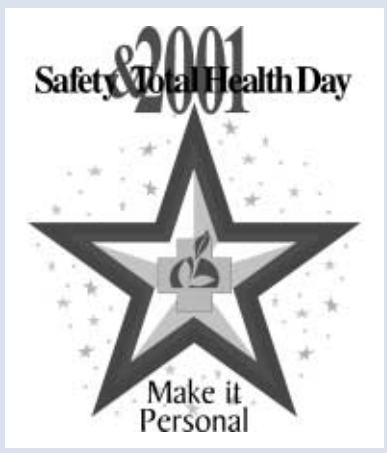
Space Family Education employee and Executive Director of the JSC Childcare Center Kristy Hirning said the science enrichment program created a highly successful camp as far as the campers were concerned.

"They never want to leave and they never want it to end," Hirning said.

"We're really doing a great community service to our own employees," Haddad said. "These kids have no other choice but daycare, here they are experiencing a better environment. We are hoping to have more financial support and more transportation to make the program grow." ■

NEWS TO KNOW

Get ready:
Safety & Total Health Day is going to Make it Personal!



It's coming

October 17, 2001

NASA STARS Implementation Update

Human Resources is offering the following hands-on Resume Builder training sessions to civil servants who are interested in learning more about NASA's new automated resume system:

Thursdays
Sept. 6, 13, 20 and 27
9-10 a.m. and 1-2 p.m.
Building 12, Room 276

First-come, first-served by registering at http://nasastars.nasa.gov/jsc/sign_up/

From the Employee Assistance Program

What to Look for in a College and What Colleges Look For in a Student

Wednesday, Sept. 5
Noon - 1 p.m.
Building 30 Auditorium
Presented by Mike and Beth Dennard of Bright Futures Consulting

Understanding the Many Facets of Alzheimer's Disease

Wednesday, Sept. 19
Noon - 1 p.m.
Building 30 Auditorium
Presented by Brenda Carr of The Alzheimer's Association

Continued from Page 1

Seeing things more clearly

The likeliest culprit seemed to be the Solid Rocket Booster (SRB) Separation Motors. As the SRBs separated from the spacecraft, exhaust particles from the motors were being cast into the flight path of the Orbiter windows where the impacts caused tiny pits and cracks in the glass.

The motors appeared to be in the right place and the exhaust particles they spewed were the correct size. The fact the right hand side of the orbiter experienced up to 50 percent less haze than the left hand side could be explained by the shielding effect of the external fuel tank line. This runs along the right hand side of the tank through the line of sight from the SRB separation motor to the Orbiter.

The only problem was the fact the motors had the perfect alibi–an original aerodynamic analysis from the drawing-board days of the Space Shuttle in the 1970s.

"We thought this was a very viable source for many reasons," Estes said about her team. "We knew the size of the particles, we knew they weren't hypervelocity impacts. The problem was we had an old aerodynamic analysis hanging over our heads that said the motor plume wouldn't hit the orbiter."

The late astronaut David Walker finally brought the issue to a head after he demanded to have his window replaced. As commander, he did not want a window that was hazier than his pilot's, Estes said. Engineers replaced the window, and at the same time decided to make a final push to identify the exact nature of the problem, its source and, finally, to stop it.

They reached the logical conclusion that if air forced debris to blow into the windows, then air could be used to blow it away from the windows. They looked to the Space Shuttle Forward Reaction Control System (FRCS) thrusters to provide the puff needed to blow the debris away from the windows and harmlessly down the back of the orbiter.

This was a concern to some who heard the idea. What would the effect be of firing thrusters during a carefully planned launch? What if the firing of the thrusters caused the shuttle to tumble out of control?

"It's basically like spitting in a hurricane," Estes said. "And the two seconds worth of fuel is fuel they don't need and probably would dump anyway. This was a low-cost, win-win experiment."

So programmers reworked the launch software to force a plume to fire from the FRCS thrusters at the front of the shuttle one second before the SRB separation motors started, through their extremely quick operation and one second after they finished. This programmed FRCS firing has been conducted on all flights since STS-98. The results of the experiment have been better than anyone expected.

"We are getting a zero increase in new impacts and no new haze," Estes said. "Before we were getting three-digit increases in the scatterometer numbers (a device which objectively quantifies the light scatter, or haze, from a surface). We now get no increase in scatter.

"We were hoping to get maybe 80 percent of the problem resolved with this plan. It has been highly successful. We are getting a 100 percent success rate." ■